



INDIVIDUAL APPROACH IN TEACHING GENETICS

Daminov M.A.

Samarkand State Medical University

Annotation: *The article discusses the specific aspects of genetics teaching. It is understood as focusing on the individual psychological characteristics of students, including in working with them special methods and techniques that correspond to their individual characteristics.*

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Today biology is one of the most promising sciences. The XXI century is the century of biology. Huge material and intellectual resources are invested in the development of this science. Such specific scientific terms as cloning, mutations, DNA, become well-known and popular in society. But most people are far from a true understanding of these terms. The residual knowledge from the school course of biology does not allow a modern person to understand modern biological discoveries, which are becoming revolutionary in society. Therefore, there is a need for new approaches in teaching biology at school.

One of the topics of general biology that causes the greatest difficulties in the study of students is genetics. This science is characterized by a large number of special terminology, special regularities, methods, and tasks. Studying genetics requires well-developed abstract thinking.

In our opinion, one of the effective methods of teaching genetics can be an individual approach. It is understood as orientation on individual-psychological peculiarities of pupils, inclusion of special methods and techniques corresponding to their individual features in work with them.

Genetics is rightly considered one of the most important areas of biology. Today the main object of research is a human being. It is genetics that faces the task of finding ways to overcome ailments and prolong human life. Medical genetics is often singled out as an independent section of human genetics, which is not quite justified, since the genetic mechanisms that determine hereditary diseases and normal properties are the same for all biological beings. The specificity lies only in the fact that human hereditary diseases are associated with those of the chromosomal abnormalities that block normal development. Of no small importance in reducing the frequency of hereditary diseases is the widespread use of medical and genetic counseling, which can save many families from the misfortune of having unhealthy children. However, the problem can be solved only with high biological and especially genetic education of the population, and school should play a primary role in this.

A proper understanding of the content of biology education is an important guideline in the work of a teacher. The content of education should not be reduced



only to knowledge and skills, because even their successful assimilation cannot ensure the achievement of all learning objectives. It is well known that schoolchildren who have mastered the theoretical content of the school program (in accordance with the requirements for knowledge and skills of students) are not always capable of independent, creative thinking. In addition, even well-performing students often have a neutral or even sharply negative attitude to the very process of cognitive activity.

In the content of biological education we can distinguish the following components to be mastered by students: the first component of the content of education is knowledge. They are presented in school textbooks in the form of laws, concepts, ideas, theories, facts, concepts. Traditionally, a lot of attention is paid to the formation of knowledge.

The second component of the content of biological education is skills and abilities (ways of activity). The issues of their formation and development in students are developed in detail by didacticians and reflected in the theory of students' learning activities.

The third component of the content of education is the experience of creative activity. When creatively solving a new problem, pupils necessarily apply previously learned knowledge and skills in a new situation, creatively transforming them in accordance with the content of the problem. The main form of transferring the third component of the content of biological education - the experience of creative activity - to students is the creative tasks used by the teacher at the lesson, in the process of independent solution of which students accumulate the experience of searching for ways to solve the problem. As a rule, the search for answers to problem questions and solution of creative tasks arouses a pronounced interest and a variety of positive emotions in students.

The fourth component of the content of biological education is the experience of students' emotional and value-based attitude towards nature, man and the process of studying genetics. The accumulation by schoolchildren of experience of an emotional and value-based attitude to the process of cognition is directly related to the individual's clear definition of the needs and motives of educational activity. Without the accumulation by schoolchildren of experience of an emotional and value-based attitude to the study of genetics, the educational process in this subject cannot be considered complete. The way to assimilate this component of the content of biological education is through experience, through the activity of the senses, and during the perception of educational material.

All four components of the content of biological education are closely interconnected and inseparable in a single educational process. It is necessary to strive to organize students' comprehensive assimilation of all components of educational content in the classroom.



General methodological ideas are important for the correct construction and successful implementation of specific lessons in high school. Next, we present lesson planning and the main objectives of genetics lessons that a teacher can rely on.

The objectives of the lesson are:

1. Systematize and generalize students' knowledge on the topic "Fundamentals of Genetics", give them the necessary logical consistency, check the quality of their assimilation by schoolchildren.

2. Continue to develop in high school students the ability to characterize the essence of various genetic laws and patterns, illustrate their manifestation with specific examples, solve genetic problems, write down crossing patterns in genetic and chromosomal expression, explain the reasons for the results obtained by scientists when crossing organisms. Check the quality of students' mastery of the skills listed above.

3. Convince schoolchildren of the knowability of various manifestations of heredity and variability with the help of scientific methods used by modern genetics.

One of the effective methods of teaching the subject of genetics can be an individual approach. It is understood as focusing on the individual psychological characteristics of students, including in working with them special methods and techniques that correspond to their individual characteristics. Students' mastery of biological terms helps them understand the varied and rather complex content of a genetics course.

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